FY2001 ITWF: AWARDS

ABSTRACTS OF 10 PROJECTS – alphabetical by pi name

EIA-0120093
PI's: Dorothy T. Bennett and Cornelia Brunner
Institution: Education Development Center (EDC)
Title: Designing for Diversity: Investigating Electronic Games as Pathways for Girls into Information Technology Professions

This award provides support for a 2-year study to research design criteria of electronic games that affirm and support 8-14 year old girls' positive notions of (Information Technology) IT professions. While much is known about general characteristics of games that appeal to girls and boys, there is a little information about the specific game design features, characteristics and problems that might successfully attract different children into IT. The study is expected to result in the development of specific design criteria for game designers and practical guidance for educators interested in using games to foster children's IT skills and interests.

EIA-0120056
PI's: Phyllis Bernt, Joseph Bernt and Sandra Turner
Institution: Ohio University
Title: Getting the Media Message: The Portrayal of Gender, Race, and Information Technology in the Media Environment of Middle School Students.

This award provides support for a study examining media messages about Information Technology (IT) careers that middle school students receive from television, popular magazines, videotapes, movies, and from books, brochures and Internet sites that provide career information. The analysis will concentrate on the media portrayal of IT occupations, especially in terms of gender and race, that students are likely to encounter during the middle school years. Sixth and Seventh grade students in 12 demographically diverse classrooms across the nation will participate in classroom-based action research employing mathematics, language arts, and social science skills in surveying their peers and conducting their own content analysis of media messages about IT careers.

EIA-0120092
PI: Pascale Carayon
Institution: U. Wisconsin
Title: Paths to Retention and Turnover in the IT Workforce: Understanding the Relationships Between Gender, Minority Status, Job and Organizational Factors

This award provides support for the University of Wisconsin to conduct a study that will identify the job, organizational and quality of working life (QWL) factors that influence turnover intention within the current IT workforce, and the way gender and minority

status play a role in the relationships between job and organizational factors, QWL and intention to turnover. Two different models of the role of gender and minority status will be used and tested and compared in a sample of IT employees across a range of companies and jobs. The first research model postulates that gender and minority status have direct effects on job and organizational factors and both direct and indirect effects on QWL and intention to turnover. The second research model postulates that gender and minority status play a moderating role in the relationship between job and organizational factors and QWL and intention to turnover.

EIA-0119880
PI: Ron Eglash
Institution: Rensselaer Polytechnic Institute
Title: Culturally Situated Tools

This award provides support for Rensselaer Polytechnic Institute (RPI) to develop culturally-situated design tools to motivate ethnic minority students to learn mathematics and to pursue careers in Information Technology. The tools will be integrated into standard curricula for use by approximately one thousand middle school students in Rensselaer Polytechnic Institute's local GEAR-UP program (the U.S. Department of Education's Gaining Early Awareness and Readiness for Undergraduate Program). The use of the design tools will be evaluated over a 3-year period and the results will be disseminated widely.

EIA-0120096
PI's: Gary G. Huang, Patricia C. Thompson and Young-Hee Yoon
Institution: CSR, Inc.
Title: Information Technology Educational Pathways of African Americans: A Synthetic Study with NELS 1988-2000 Data and Case Studies

This award to CSR, Incorporated provides support for a 3-year study to examine the secondary and postsecondary educational pathways that African-American youth follow to pursue information technology (IT) careers. The study will distinguish specific factors linked to the successful pursuit of IT education from other generic predictors of educational attainment. The finding are intended to guide sound policy and program decisions that will support an equitable participation of African Americans in the IT education and workforce. The study will compare the educational pathways taken by African Americans to pursue careers in IT with similar pursuits in other "pre-professional" careers in law, medicine, and business administration, and the fields of science, mathematics, engineering, and technology.

EIA-0119839
PI's: Paula G. Leventman, Thomas P. Cullinane and Ronald F. Perry
Institution: Northeastern U.

Title: Multiple Pathways towards Gender Equity in the Information Technology Workforce

This award provides support for a study of graduates of an information systems graduate program (MSIS) at Northeastern University, as well as men and women currently working in Information Technology (IT) positions, to understand the factors that influence entry and persistence of women in IT positions. The MSIS program was designed for adult learners who wished to make a career transition to the IT field. The research team will use the longitudinal data collected in the study to develop and validate a model that will predict women's IT career pathways.

EIA-0120138
PI's: Russel Stockard, Ali Akbari and Myungsook Klassen
Institution: California Lutheran U.
Title: Stretching Horizons: Upward Bound Programs in Stimulating Information Technology Education and Career Aspirations among Underrepresented Minorities

This award provides support for California Lutheran University to conduct a research project to examine why so few male and female African American and Latino students are studying computer science at the college level. The three cohorts, Upward Bound students, Math Upward Bound students and non-Upward Bound students, will be studied as to their experiences, opportunities, attitudes and aspirations with respect to information technology (the federally-funded Upward Bound program is made up of two different programs, the traditional Upward Bound program and the Math/Science Upward Bound program). The sites of the study are schools in the three-county Southern California region IX of Upward Bound, Los Angeles, Ventura and Orange Counties.

EIA-0119858
PI: Louis Tornatzky
Institution: Tomas Rivera Policy Institute
Title: Catching Up: A Longitudinal Study in Latino Participation in the Information Economy

This award provides support for a 3-year study to better understand the factors relevant to Latino's involvement in Information Technology (IT) careers. The study will examine various factors influencing the attenuated representation of Latinos in IT jobs, career paths, and appropriate educational experiences. The research approach will be longitudinal using a cross-sectional approach to gather quantifiable as well as qualitative data that encompasses the many decisions and influences that occur between late-adolescence and early IT careers. The research approach will also be multi-level examining the decisions and behaviors of Latinos as affected by: (1) family dynamics including socioeconomic standing, role models, and immigration history; (2) school structure, policies, student population, and programs, at three levels within K-16; (3) community characteristics and dynamics; and (4) regional economies and markets. Data

will be gathered from four metropolitan areas with high concentrations of Latino residents: Los Angeles, Houston, Chicago and New York.

EIA-0120055
PI: Roli Varma
Institution: U. New Mexico
Title: Why so Few Women in Information Technology?: A Comparative Study.

This 1-year empirical pilot study will investigate the reasons for the under-representation of women majoring in Information Technology (IT) related disciplines in institutions of higher education. The study will focus on two questions:

   1) Why do women who have the potential to succeed in the study of IT disciplines, take alternative educational paths?
   2) What barriers and obstacles must be overcome to attract more women to IT education and careers?

EIA-0120111
PI's: Catherine J. Weinberger and Peter Kuhn
Institution: UC, Santa Barbara
Title: Entry, Earnings Growth, and Retention in IT Careers: An Economic Study

This award provides support for the University of California Santa Barbara to conduct three studies which together address questions pertaining to the college major choices of young women, and to the persistence and labor market success of college-educated women in Information Technology Workforce (IT) careers. The first study will examine the career paths of women who already have IT degrees and will explore whether there are labor market barriers that make IT careers less appealing to women. The second is a longitudinal study that will utilize decision theory to scrutinize common assumptions of economic models of career choice. The third study will survey young women's beliefs (or stereotypes) about the characteristics of IT jobs and the women who fill them. The information from this last survey will be linked to the longitudinal second study so that correlations between these beliefs and later career outcomes can be determined.